TESTIMONY OF CRAIG MANSON, ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS, DEPARTMENT OF THE INTERIOR, BEFORE THE SUBCOMMITTEE ON FISHERIES CONSERVATION, WILDLIFE AND OCEANS, HOUSE RESOURCES COMMITTEE, REGARDING THE CONSERVATION OF CORAL REEFS

June 27, 2002

Mr. Chairman, I appreciate the opportunity to appear before you today. As part of my duties as Assistant Secretary for Fish and Wildlife and Parks, the Secretary has delegated to me the role of Co-Chairman of the United States Coral Reef Task Force.

In an effort to prevent further loss of coral reef ecosystems, Executive Order 13089 on Coral Reef Protection was issued in June 1998. The executive order established the U.S. Coral Reef Task Force, and directed it to develop and implement a comprehensive program of research and mapping to inventory, monitor, and "identify the major causes and consequences of degradation of coral reef ecosystems." The order directs Federal agencies to use their authorities to protect coral reef ecosystems and, to the extent permitted by law, prohibits them from authorizing funding or carrying out any actions that will degrade these ecosystems.

The chairmanship is shared jointly by the Departments of Interior and Commerce. The other Federal members are the Departments of Agriculture, Defense, Justice, State and Transportation, the Environmental Protection Agency, the National Aeronautics and Space Administration, the National Science Foundation and the U.S. Agency for International Development. Early in its existence the Task Force made the wise decision to invite the Governors of the States with coral reefs in their waters, and the Governors of the Territories and the Associated States to join, and they have played a valuable role with the Task Force.

The Task Force has developed and approved a National Action Plan to carry out its Executive Order mandate and a Charter to formalize its operations. The final text of an Implementation Policy, largely developed prior to my confirmation, is currently under review, and I anticipate we will go forward with the final policy following our next Task Force meeting in early October.

Within the Department of the Interior, we are working at more closely coordinating the coral reef activities of the several bureaus which have responsibilities for coral reef research and conservation. This includes the Fish and Wildlife Service, the National Park Service, the Minerals Management Service, the Geological Survey and the Office of Insular Affairs.

The Department of the Interior and Coral Reefs

Coral reefs and associated seagrass and mangrove communities are among the most biologically complex and diverse ecosystems on Earth. They provide habitat to one-third of all marine fish species, build tropical islands, protect coasts from waves and storms, contain an array of potential pharmaceuticals, and support U.S. tourism and fishing industries worth billions of dollars. Coral reefs are also fundamental to the fabric of local communities, providing a source of food, materials, and traditional activities.

Over the past few decades, public awareness of the outstanding yet fragile character of these ecosystems has grown, prompting increased state and Federal efforts to protect and preserve the Nation's coral reefs. The Department of the Interior protects these sensitive habitats at twenty-four National Parks and National Wildlife Refuges, collectively amounting to almost 3,600,000 acres of coral reefs and other submerged lands. In addition, the Department conducts pioneering scientific research to determine the structure,

function, status, and condition of our Nation's coral reefs. However, most of the Nation's coral reefs have not been mapped nor have their conditions been assessed or characterized.

Studies by the U.S. Geological Survey, the National Oceanic and Atmospheric Administration, and others indicate that coral reefs are deteriorating in many places worldwide, and many are in crisis. Symptoms include loss of hard corals, increased abundance of algae, diminished recruitment of coral larvae, reduced biological diversity, and a dramatic increase in bleaching episodes and disease outbreaks. Scientists and managers still lack critical information about the causes, but evidence suggests a variety of human forces, including population increases, shoreline development, increased sediments in the water, trampling by tourists and divers, ship groundings, poor water quality from runoff and inadequate sewage treatment, overfishing, and fishing with poisons and explosives that destroy coral habitat. These stresses act separately and in combination with natural factors, such as hurricanes and disease, to degrade reefs.

The Department also works with domestic and international partners through the International Coral Reef Initiative. Launched in 1994 with the support of the United States government, this initiative aims at concerted global action to protect and monitor coral reefs around the world by building and sustaining partnerships, programs, and institutional capacity at the local, national, regional, and international level. In carrying out E.O. 13089, the Department is now working to address duplication and lack of proper coordination where they occur.

U.S. Fish and Wildlife Service

The mission of the U.S. Fish and Wildlife Service (FWS) is to work with others to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people. As threats mount to coral reefs worldwide, FWS is applying its unique expertise to protect these resources through a variety of management and operational programs. FWS manages 13 National Wildlife Refuges that include significant coral reefs. FWS also protects and restores reefs and other species and habitats, enforces laws, and works with other countries to foster reef conservation worldwide. Virtually all of these approaches are founded upon partnerships--collaborative efforts with other Federal agencies, State, local, and Territorial governments, and concerned private groups. In combination, these dedicated partners can help reduce the threats to coral reefs and conserve these vital parts of our global heritage.

Programs and Recent Accomplishments Related to Coral Reefs

• *National Wildlife Refuges:* FWS manages 10 National Wildlife Refuges (NWR) in the Pacific, which include approximately 2,164,000 acres of coral reefs and adjacent ocean habitat, and 3 refuges in South Florida and the Caribbean totaling more about 756,000 acres. Among these are two of the System's newest refuges - Palmyra Atoll NWR and Kingman Reef NWR. Established in 2001, these refuges contain some of the most extensive and biologically important reefs in the Pacific. The Refuge System administers a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats for the benefit of present and future generations of Americans. To ensure that long-term conservation goals are achieved, the FWS is developing and implementing Comprehensive Conservation Management Plans for all of its refuges with coral reefs. Refuges are also developing and employing innovative tools for managing coral reefs, including marine zoning, habitat restoration, education and outreach, law enforcement, research and monitoring, and improving the public's enjoyment of the refuges.

• *Coral Reef Conservation, Restoration, and Protection:* One FWS goal is to ensure that human activities do

not adversely affect coral reefs or species, such as endangered sea turtles, that rely on healthy reefs. FWS programs for endangered species protection, coastal habitat restoration, fisheries management, review of Federal actions, as well as direct assistance to States and Territories all help to conserve coral reefs. The FWS is also statutorily designated to comment on Clean Water Act section 404 permits and other water-related development activities under Federal authorization or permit. FWS biologists regularly coordinate with Federal, State, Territorial, and private groups to ensure that during project development, coral reef fish and wildlife are considered equally with other project-related features and adverse impacts to coral reef ecosystems from coastal and nearshore marine projects are avoided or reduced. When accidents harm reefs, FWS works with partners to assess the damage and expedite reef recovery.

Other coral conservation efforts are more proactive: for example, the coastal partnership program implements projects that protect coastal habitats before they are degraded. Examples of conservation efforts include conducting surveys of coral reefs near proposed development projects to assess potential impacts, developing recommendations to preserve the integrity of reefs, and deploying navigational aids in areas to prevent boat groundings and anchor damage.

• *Enforcing International Trade Laws:* FWS enforces international fish and wildlife-related trade laws by inspecting coral imports, intercepting illegal shipments, and collecting and maintaining U.S. trade data for coral reef species. International efforts to control the trade of corals include development of the Guide to Indian and Pacific Corals Common in the Wildlife Trade, a reference to assist inspectors and enforcement officers. In 1989, concern about the effects of international coral trade prompted the countries involved with the Convention on International Trade in Endangered Species to list all stony corals in Appendix II, which allows enforcement agencies to monitor and regulate commercial imports.

In addition, E.O. 13089 required that the United States assess its role in the international trade in coral and coral reef species, and recommend appropriate actions to ensure sustainable use of coral reef resources. FWS, working with other Task Force members, completed an assessment which showed that the United States is the primary market for imported coral and live fish, which are used in jewelry and the aquarium trade. FWS is also working with partners to combat the use of sodium cyanide poisoning, a method for collecting live reef fish for food and the aquarium industry that causes widespread destruction of the living reef.

• *International Conservation of Coral Reefs:* FWS is fostering the conservation of reefs in other countries through training and education programs, as well as projects that promote the conservation of species and habitats within a water-shed framework. Among the important habitats linked to coral reefs and targeted for conservation are seagrass beds and mangrove forests. The Western Hemisphere Program sponsors protected area manager training through two international programs, Mexico/RESERVA and Brazil/AMUC. The program also awards small grants to promote the involvement of local communities and organizations in coral reef conservation activities.

National Park Service

The National Park Service (NPS) manages 385 units in the National Park System, protecting many of our diverse natural, cultural, and recreational resources. NPS achieves these goals by working cooperatively with Federal, State, and local agencies, Native American authorities, user groups, and adjacent landowners. Ten Park units with coral reef habitats protect almost 275,000 acres (270,000 acres in the South Atlantic and Caribbean and 5,000 in the Pacific). Among these is Dry Tortugas National Park in South Florida, established in 1908 as the world's first marine protected area. On July 1, 2001, it became part of the largest

fully protected underwater ecological reserve in North America with the creation of the Tortugas Ecological Reserve. Biscayne National Park, established in 1968 to protect and preserve a nationally significant marine ecosystem, is the largest NPS coral reef unit, with about 172,500 acres of coral reefs, mangrove shorelines, and coastal estuaries. The nearshore reefs at War in the Pacific NHP, Guam, are home to an estimated 3,500 to 4,000 species and are among the most diverse ecosystems within the National Park System. As a global leader in the management of underwater parks, NPS has long been involved in the development of innovative and improved coral reef monitoring and management tools. NPS works internationally to share expertise and knowledge with others and to improve the level of protection afforded coral reef parks in the United States and elsewhere.

Programs and Recent Accomplishments Related to Coral Reefs:

• *Education and Outreach:* NPS recognizes that strengthening the capacity of communities and individuals to conserve and use coral reefs and related ecosystems in a sustainable manner requires effective public education. Each of the 10 NPS units with coral reef resources offers interpretive programs, augments school curricula, coordinates public workshops, and implements programs for both recreational and commercial user groups, including those engaged in fishing, boating, SCUBA diving, snorkeling, and underwater photography. Activities range from video presentations, to underwater trails, to extensive curriculum-based education programs. Other examples include the much-acclaimed underwater interpretive trails established at Virgin Islands National Park and Buck Island Reef National Monument. A new Center of Research and Learning, hosted by Biscayne National Park, has received NPS approval as part of a national network of Learning Centers funded by the NPS Natural Resource Challenge, an initiative to improve natural resource stewardship.

• *Natural Laboratories:* National parks continue their long tradition of serving as coral reef research sites. Groundbreaking, innovative research was conducted from 1969-71 during the Tektite I and II underwater habitat projects at the Virgin Islands National Park. Early research at both Biscayne and Dry Tortugas National Parks revealed the level of human impact to reefs due to recreational diving and fishing. This research led to pioneering use of reef mooring buoys and designated ship anchorages to reduce impact to reefs. NPS currently administers and coordinates research on coral reefs with other government agencies and universities on topics ranging from long-term ecosystem monitoring of water quality, to fish landings, and to effects of hurricanes and coral diseases. At War in the Pacific National Historic Park, assessments of the effects of reef sedimentation caused by accelerated upland erosion from human-set savanna wildfires will result in the development of best management practices designed to alleviate this potentially serious coral reef impact. A 3-year joint effort with the National Oceanic and Atmospheric Administration and U.S. Geological Survey has completed mapping the coral reef ecosystems of Puerto Rico and the U.S. Virgin Islands. Other continuing efforts include long-term studies of endangered sea turtles.

• *Restoration and Recovery:* Although coral reef resources within the National Park System receive protection as national parks, they are continually subjected to damage from both natural events and human stresses, such as fishing, recreational uses, environmental pollution, anchor damage, and ship and boat groundings. Six of the ten coral reef NPS units allow commercial fishing in accordance with their authorizing legislation. To protect these fragile resources, four parks, Buck Island Reef National Monument, Dry Tortugas National Park, Virgin Islands National Park, and Virgin Islands Coral Reef National Monument, have established fully protected zones for certain areas in which all forms of resource extraction are prohibited. In addition, NPS is responding to degradation or damage from impacts such as boat groundings. For example, Biscayne National Park suffers more than 200 reported boat and ship groundings yearly. To reverse widespread destruction of seagrass beds and coral reefs, NPS has taken the lead in

applying Natural Resource Protection Act authorities to recover damages. Since 2000, Biscayne National Park has been awarded $2.1 million in damages to cover the costs of assessing, monitoring, and restoring injuries sustained from the Motor Tanker Igloo and the Tug Allie-B. In 2000, Virgin Islands National Park completed implementation of a Resource Protection Plan. Under the plan, 211 moorings and 111 resource protection buoys were installed to allow access to natural areas while preventing anchor damage to benthic habitats.

• *Monitoring:* Since 1989, NPS and the USGS have jointly conducted coral reef monitoring programs for the Atlantic-Caribbean, focusing on natural and human disturbance to reefs around the U.S. Virgin Islands. The Coral Reef Monitoring Manual produced by NPS in 1994 has become an internationally recognized source of information on methods and techniques. The manual has been updated by USGS, translated into Spanish, and made available electronically over the Internet. An innovative approach to monitoring coral reefs was developed by the joint NPS/USGS Inventory & Monitoring Program. The method combines a SONAR-based underwater positioning system with digital videotape recordings to create the most scientifically rigorous reef-monitoring protocol in the world. This rigorous method has confirmed the continued decline of live coral documented by previous methods. Dedicated in 1997, the National Park of American Samoa contains over 2,500 acres of prime Indo-Pacific coral reefs and nearshore habitats. Scientists and resource managers at the Park are determining the "Vital Signs" of their coral reefs by developing new protocols that are appropriate to small-scale parks.

• *Resource Management:* In 2001, more than 30,000 acres of seagrass beds, coral reefs, mangrove shorelines, and other vital marine areas were designated for protection and management by the NPS. Over 12,000 acres were designated under the new Virgin Island Coral Reef National Monument, and an additional 18,000 acres were added to the existing Buck Island National Monument. The addition of these areas to the NPS system will provide additional protection for the marine mammals, sea turtles, and seabirds that frequent these areas, as well as countless species of fish and invertebrates. Dry Tortugas National Park has adopted a zoning plan to protect and manage this outstanding area, which includes exceptional reef, spawning and nursery habitats, as well as shipwrecks and other cultural resources. General Management Plans for the other coral reef parks are also being updated to provide a road map for each park to meet its resource protection and management goals.

• *International Marine Protected Area Network:* The NPS, in cooperation with the United Nations Environment Program in Jamaica, is working to improve communication among marine protected area mangers across the Caribbean through the Caribbean Marine Protected Area Management (CaMPAM) network. More than 350 CaMPAM members meet regularly to exchange information on emerging resource issues, management and research protocols, and other issues of concern to the resource management community.

U.S. Geological Survey

The U.S. Geological Survey is the Nation's primary provider of water, earth, and biological science information related to the environment, natural hazards, and mineral, energy, water, and biological resources. The agency provides world-class research and monitoring programs for volcanoes and earthquakes, monitors the status and trends of the Nation's biological resources, and is the Nation's principal civilian topographic mapping agency. With research centers and field stations in south Florida, the U.S. Virgin Islands, Hawaii, and elsewhere across the Nation, USGS is providing resource managers with information critical to the understanding of the ecology, health, structure, function, and management of coral reefs. USGS scientists are increasing our understanding of the structure and function of reef communities

through their studies of the mechanisms governing reef health and disease, geologic growth and development, sediment and groundwater transport, and the effects of fishing and no-take zones on coral reef resources.

Programs and Recent Accomplishments Related to Coral Reefs:

• *Innovative Techniques for Determining Reef Health:* Over the past decade, USGS scientists have been developing innovative techniques for monitoring coral reefs in the Virgin Islands National Park, Buck Island Reef National Monument, and Dry Tortugas National Park. A new technique developed by USGS and the NPS, combining a SONAR-based underwater positioning system with digital imaging, is the most scientifically rigorous reef-monitoring protocol in the world. These methods are being used by USGS scientists to develop indicators of reef health, such as the amount of live coral versus algae on the reef and the abundance of juvenile and adult reef fish. Results indicate that the health of coral reefs in a number of areas over the past decade has declined.

New protocols are also being used to map and assess the condition of elkhorn coral. Once a dominant reef-building species in the Caribbean, elkhorn coral has suffered dramatic declines since the 1970s from White Band Disease and storm damage. USGS scientists are tracking recovery of elkhorn coral occurring in some areas and its relationship to reef community structure. USGS scientists have also developed a chamber for measuring metabolic rates (productivity) of benthic communities, such as coral reefs, seagrass beds, and other hard and sand bottom communities. The Submersible Habitat for Analyzing Reef Quality (SHARQ) is being tested to determine the potential for using benthic community metabolism as an indication of ecosystem health. By examining ecosystem health in terms of system processes or function, scientists can compare ecosystems in different geographic locations that might be characterized by different species of organisms. Monitoring efforts have begun in Biscayne National Park, Hawaii, Florida Bay, and Tampa Bay.

• *Hawaiian Reef Fish and Habitat:* USGS studies of the relationships between Hawaiian reef fish assemblages and their coral reef habitats are providing better information to help improve management of reef areas and design of marine reserves.

• *Mapping in the Pacific:* State-of-the-art multibeam mapping techniques are being used to map key areas around Hawaii; high-resolution bathymetric and backscatter data are being used to address questions related to environmental quality, hazards, and resources. Maps generated by USGS in 1998 are being used to characterize the condition of reef resources in the Humpback Whale National Marine Sanctuary. USGS scientists are mapping patch reefs in Hawaii and Indonesia, using satellite and aerial photography to obtain information on the location of reefs and the active sedimentary processes that affect reef conditions.

• *Mapping in South Florida:* USGS scientists are mapping the surface and subsurface reef structures throughout the Florida Keys to establish the relationship between reef distribution and the underlying geology, and to evaluate factors controlling reef health within the Florida Keys National Marine Sanctuary and Biscayne National Park. USGS is also developing sediment composition data for the Florida Keys showing reef area and health, on the basis of a Sanctuary-wide assessment of the Florida Keys National Marine Sanctuary. These studies have documented changes in both sediment composition and coral reef development over the past few thousand years. Descriptive and interpretive maps of the Sanctuary will be produced through the use of seismic, sidescan, and core data. Such information is useful for future coral reef management.

• *Water Quality Studies:* To address concerns about recent algal blooms in Florida Bay and coral diseases on

the reef tract, USGS scientists are working with the State Department of Environmental Protection, the U.S. Environmental Protection Agency, and university scientists to carry out routine water quality assessments. A network of submarine monitoring wells have documented the flow of contaminated ground water in the extremely porous limestone that underlies the area. The limestone receives the effluent of approximately 30,000 septic tanks, 10,000 cesspools, and 1,000 shallow disposal wells. USGS scientists are also reconstructing the history of water quality in the bay during the past 100-150 years, using stable isotopes and trace elements in fossils and corals from well-dated cores.

• *Atmospheric Dust Studies:* USGS geologists and coral biologists, along with researchers from the University of Miami Rosensteil School for Marine and Atmospheric Science, the University of South Florida Marine Center in St. Petersburg, and Duke University, are collaborating to determine if there is a relationship among global warming, deposition of dust, and Caribbean-wide outbreaks of coral diseases. Results indicate that during strong "African dust events," the numbers of microorganisms can be two to three times that found during "clear atmospheric conditions." These events may be linked to outbreaks of disease in Caribbean corals, toxic algal blooms such as the red tides along Florida's coasts, and asthma in humans. Increased quantities of atmospheric dust began blowing westward in the early 1970s (1 billion tons now cross the Atlantic each year) with desertification and expanding agriculture in northern Africa.

Office of Insular Affairs

The Department of the Interior has administrative responsibility for coordinating federal policy in the territories of American Samoa, Guam, the U.S. Virgin Islands, and the Commonwealth of the Northern Mariana Islands, and oversight of federal programs and funds in the freely associated states of the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau. The Office of Insular Affairs (OIA) works to develop more efficient and effective government in the insular areas by recommending policies, providing financial and technical assistance, and strengthening Federal-insular relationships.

Programs and Recent Accomplishments Related to Coral Reefs:

• *U.S. Islands Plan of Action:* The majority of coral reefs in the United States are located in the insular areas. Since 1994, OIA has sponsored several workshops with island governments to identify local and regional priorities for the protection and sustainable use of their coral reefs. The priorities are summarized in the U.S. All Islands Coral Reef Initiative Strategy, available from OIA. The Strategy identifies a broad scope of action, from education and outreach to the establishment of marine protected areas and increased local enforcement. The Strategy is a corner-stone of the National Action Plan to Conserve Coral Reefs, adopted by the U.S. Coral Reef Task Force in March 2000.

• *Coral Reef Grants:* OIA, in cooperation with the National Oceanic and Atmospheric Administration, annually provides technical and financial assistance to the insular areas to improve the management and protection of their marine resources. Grants support a broad range of projects designed to fill gaps in management capacity and to develop a comprehensive resource management program within each of the jurisdictions. Notable accomplishments include the declaration of new protected areas, status reports on reef health, the establishment of local coral reef advisory groups, the development of community-based management plans, expanded research on coral health and restoration, the development of GIS information and management tools, the development of culturally appropriate education materials, and increased public awareness and community support for the sustainable use and conservation of coral reefs. Recognizing that overfishing poses a particularly serious threat to their local reef fish stocks, American Samoa recently

banned SCUBA-assisted fishing as well as the harvest of live rock. With support from OIA and NOAA, the first territorial parks have been established in the Commonwealth of the Northern Mariana Islands and the U.S. Virgin Islands.

• *Regional Cooperation:* The Marine Resources Pacific Consortium (MAREPAC) was established in December 1999 with funding from OIA. MAREAPC is a model program that romotes regional cooperation on marine resource use, management, and preservation among the Pacific Islands of American Samoa, the Federated States of Micronesia, the Commonwealth of the Northern Marianas, the Republic of Palau, Guam, and the Republic of the Marshall Islands. MAREPAC now serves as the advisory group to the Association of Pacific Island Legislatures and is helping them craft effective legislation on the conservation and sustainable use of their marine resources.

• *Working with the Freely Associated States:* The U.S.-affiliated islands total fewer that 2,000 square miles of land in aggregate but are distributed over more than 3,000,000 square miles of ocean - an area equivalent to the conterminous United States. These waters are home to some of the most extensive and biologically diverse coral reef ecosystems in the world. Islanders have depended on these resources for a wide range of utilitarian, symbolic, and ornamental functions since prehistoric times. OIA works with the freely associated states to improve the management and use of their marine resources. With funding from OIA, a team of stakeholders and technical experts is designing the first national system of protected areas in the Federated States of Micronesia. Using an ecoregional planning approach, the team is developing a portfolio of marine and terrestrial conservation areas that are representative of the full array of ecological communities.

• *Reef Recovery:* OIA worked with other Federal and local partners to remove nine abandoned fishing vessels grounded by a storm on coral reefs in Pago Pago Harbor, American Samoa. Monitoring of the area indicates that some of the coral reefs are recovering. OIA also provided funds to the Government of Guam to assist with the recovery of their coral reefs following Typhoon Paka in 1997.

Minerals Management Service

As steward of our Federal offshore lands known as the Outer Continental Shelf, the Department of the Interior is responsible for balancing the Nation's search for petroleum energy and marine minerals with the protection of the human, marine, and coastal environments. The Minerals Management Service's (MMS) environmental programs serve this important mission by providing the information necessary for informed decisions on energy and non-energy mineral planning and development activities for the Outer Continental Shelf.

Programs and Recent Accomplishments Related to Coral Reefs:

• *Protection of Flower Garden Banks:* Since the early 1970s, MMS has supported a comprehensive program of mapping and multidisciplinary study of the East and West Flower Garden Banks, located in a petroleum-rich area in the Gulf of Mexico. The Flower Garden

Banks are a pair of topographic features, topped by an array of reef-building corals and associated organisms. MMS is currently supporting a long-term monitoring effort, cosponsored by the National Marine Sanctuary Program, to assess the health of the coral reefs and evaluate changes in the coral community. MMS will use this information to evaluate the adequacy and effectiveness of current lease stipulations in protecting the important biological resources of the Flower Garden Banks. To date, scientific assessments show that the corals of the East and West Flower Garden Banks are healthy and growing. In 1996, MMS

received the Federal Environmental Quality Award from the Council on Environmental Quality and the National Association of Environmental Professionals for environmental monitoring and research in the Flower Garden Banks National Marine Sanctuary.

• *Larval Dispersal Study:* MMS is supporting a study of the long-distance dispersal of coral larvae originating from the Flower Garden Banks using satellite-tracked buoys. Information from this study will be used to establish the role of the Flower Garden Banks as a larval source for coral reefs of the Florida Keys and Mexico.

• *Effects of an Oil Spill on Coral Reefs:* MMS sponsored a major study of the effects of spilled crude oil on coral reefs following the accidental rupture of a storage tank at a coastal refinery in Bahia Las Minas, Panama. This 5-year study examined habitats along more than 80 km of oiled shore, including intertidal reef flats, mangroves, seagrass beds, and coral reefs. A general decline in the health of coral reefs at control sites was observed during this study, consistent with trends observed across the Caribbean.

Conclusion

As the Nation's primary steward of natural resources, the Department of the Interior has responsibility for the well-being of the coral reef resources under its jurisdiction. The Department also has legal and enforcement authorities used in protection of these important ecosystems. Through its science and resource management bureaus, we conduct a wide variety of programs that directly or indirectly protect coral reefs for the benefit and enjoyment of the public. Coral reef habitats and their astounding biological diversity are in decline worldwide, even in many protected areas. In some instances, protection could be made more effective with better understanding of how factors interact to degrade these complex systems. In others, we are doing the right things, but compartmentalization and fragmentation of actions have led to less than full effectiveness. The Department's bureaus are committed to working toward more effective, coordinated responses to coral reef protection.

In response to Executive Order 13089, the Department is redoubling its efforts to protect coral reefs. We will inventory, map, and assess the condition of our coral reef resources; will support directed research that will give our managers the knowledge and tools they need to protect coral reefs effectively; and we will move forward with actions needed for conservation, mitigation, and restoration of these fragile ecosystems. As co-chair of the Coral Reef Task Force, the Department will be a leader in establishing linkages with other Federal and State agencies and other nations. Through these linkages, we hope to share information and technologies and ensure that protection efforts are coordinated to provide the maximum benefit for our world and for future generations.

This concludes my formal statement, and I will be pleased to respond to any questions you may have.

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